

### Remarks

The drawings, specification, and claims were amended in accordance with the amendments above. The amendments to the claims are being made merely to clarify the invention. All of the amendments are fully supported by the specification, claims, and figures as originally filed. No new matter is believed or intended to be involved.

Applicant notes that the amendments to the drawings and specification are based on disclosure in U.S. provisional patent application no. 60/557,230, entitled "ACTIVE, MULTIPLEXED DIGITAL NEURO ELECTRODES FOR EEG, ECG, EMG APPLICATIONS," filed March 29, 2004, to which the present application claims priority, and which the present specification incorporated by reference in paragraph [0001]. Applicant submits that the disclosure of U.S. provisional patent application no. 60/557,230, taken in combination with the remainder of the present disclosure, fully supports the present amendments to the drawings and specification in accordance with 35 U.S.C. §112. Therefore, Applicant submits that the present amendments to the drawings and specification do not constitute the addition of new matter. To the extent that the Office disagrees, the Office is respectfully requested to identify which specific subject matter from the new drawings and/or amended specification language is not adequately supported by the disclosure of U.S. provisional patent application no. 60/557,230, as incorporated by reference into the present application.

### Objection to the Drawings

In the Office Action dated 01/21/2011, the Office objected to the drawings for failing to show an "amplifier co-located with the reference and signal electrodes." Applicant notes that this subject matter is shown in new FIGS. 12-13. The objection has thus been obviated, and Applicant therefore respectfully requests that the objection be withdrawn.

### §112 Rejections

Claims 1-22 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In particular, the Office stated that the present disclosure failed to provide adequate support for any particular configuration of an amplifier relative to an electrode as recited in claim 1. Applicant submits that the present disclosure does

in fact provide adequate support for such recitations of amended claim 1. In particular, the presently claimed configuration of an amplifier relative to an electrode is at least supported by new FIGS. 12-13 and amended paragraph [0038] of the present disclosure. Applicant further notes that new FIGS. 12-13 and amended paragraph [0038] are based on and supported by the disclosure of U.S. provisional patent application no. 60/557,230, entitled "ACTIVE, MULTIPLEXED DIGITAL NEURO ELECTRODES FOR EEG, ECG, EMG APPLICATIONS," filed March 29, 2004, to which the present application claims priority, and which the present specification incorporated by reference in paragraph [0001]. Applicant therefore respectfully requests that the §112 rejections be withdrawn.

### §103 Rejections

Claims 1-3, 7, 11, and 13-22 were rejected under 35 U.S.C. §103(a) as being obvious over Finkenzeller et al. (U.S. 5,954,667) in view of John et al. (2001) (U.S. 2001/0049480). Claims 23-25 and 27-28 were rejected under 35 U.S.C. §103(a) as being obvious over Finkenzeller et al. in view of John et al. (2001), and further in view of John (2005) (U.S. 2005/0018858) and Clauson et al. (U.S. 5,423,327). Claims 4-6, 8-10, and 30-32 were rejected under 35 U.S.C. §103(a) as being obvious over Finkenzeller et al. in view of John et al. (2001); or Finkenzeller et al. in view of John et al. (2001), John (2005), Clauson et al., and further in view of Lencioni, Jr. (U.S. 4,219,028). Claims 12 and 29 were rejected under 35 U.S.C. §103(a) as being obvious over Finkenzeller et al. in view of John et al. (2001); or Finkenzeller et al. in view of John et al. (2001), John (2005), Clauson et al., and further in view of Zoth et al. (U.S. 6,786,873). Claim 33 was rejected under 35 U.S.C. §103(a) as being obvious over Finkenzeller et al. in view of John et al. (2001) and further in view of John et al. (2005). For at least the reasons set forth below, Applicant respectfully submits that the combined art of record fails to render any of the present claims obvious.

Applicant submits that the art of record fails to teach or suggest all of the limitations recited in each independent claim in accordance with MPEP 2143.03. For instance, Applicant notes that amended independent claim 1 recites electrode assemblies having electrodes co-located with local amplifiers, which are operable to locally amplify signals sensed by the electrodes. In other words, each electrode has its own local amplifier that is co-located with the

electrode. These limitations, among others recited in amended claim 1, are neither taught nor suggested by the combined art of record. Applicant therefore submits that the combined art of record fails to teach or suggest all of the limitations of amended claim 1 in accordance with MPEP 2143.03. Accordingly, Applicant respectfully submits that the combined art of record fails to render present claim 1 obvious in accordance with MPEP 2143

The Office admitted that the prior art neither shows each electrode having its own local amplifier nor shows a local amplifier being co-located with a respective electrode. Rather than finding such a teaching in the art, the Office made a shortcut invocation of the case *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893), apparently relying on that case for a suggestion that putting two pieces together is *per se* obvious. Applicant submits that the Office is inappropriately trying to apply *Howard v. Detroit Stove Works* in a rigid fashion. The U.S. Supreme Court has (much more recently than 1893) clearly warned against the rigid application of formulas in obviousness analysis. See *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007). The *Howard v. Detroit Stove Works* case involved cast iron stove parts from the 1800s. While it may very well have been obvious to integrate parts together in such a crude technology, Applicant submits that the technology recited in amended claim 1 (i.e., device with electrode assemblies sensitive enough to detect AER signals) is a far cry from circa 1800s stove parts, such that the court's observations in *Howard v. Detroit Stove Works* cannot be properly automatically carried over to the present claims without an actual technical analysis. In other words, the integration of components recited in amended claim 1 involved more than routine skill, and certainly more skill than would have been required to integrate cast iron stove parts together. Furthermore, focusing too heavily on integration of components in claim 1 improperly fails to consider the invention recited in amended claim 1 *as a whole*. For at least the foregoing reasons, Applicant respectfully requests that the §103 rejection of claim 1 be withdrawn.

Amended independent claim 23 recites "initiating the auditory stimulus at a predetermined slope of the resting brain wave." These limitations, among others recited in amended claim 23, are neither taught nor suggested by the combined art of record. In rejecting similar subject matter previously recited in claim 27 (which has been cancelled), the Office did not cite any actual passages in the prior art. Instead, the Office simply said that Finkzeller et al. "disclose necessarily" this subject matter. This analytical approach by the Office clearly could

not be sustained on Appeal. First, Applicant submits that Finkzeller et al. does not inherently teach the above-quoted subject matter of amended claim 23 (and none of the other references make up for this shortcoming). Stimuli in the prior art could be initiated at any time other than at a predetermined slope of a resting brain wave. Second, if the Office was attempting to take a position that Finkzeller et al. inherently teaches the above-quoted subject matter of amended claim 23, then the Office has fallen far short of the burden set forth in MPEP 2112. Third, if the Office was attempting to take Official Notice, then the Office has fallen far short of the burden set forth in MPEP 2144.03. For at least the foregoing reasons, Applicant submits that the combined art of record fails to teach or suggest all of the limitations of amended claim 23 in accordance with MPEP 2143.03. Accordingly, Applicant respectfully submits that the combined art of record fails to render present claim 23 obvious in accordance with MPEP 2143, and respectfully requests that the rejection be withdrawn.

Amended independent claim 33 recites two acts in combination. One act comprises “monitoring the AER data for the presence of an artifact, wherein the act of monitoring the AER data for the presence of an artifact is performed during the acts of recording AER data across the reference and signal electrodes and characterizing the AER data with the data analyzer.” The other act comprises “in response to determining the AER data to contain an artifact, imposing a sampling delay and repeating the acts of generating an auditory stimulus in accordance with the predetermined epoch of auditory stimulus and sampling AER data.” These limitations, among others recited in amended claim 33, are neither taught nor suggested by the combined art of record. In rejecting claim 33, the Office cited paragraph [0076] of John (2005) as teaching a sampling time delay. To the extent that John (2005) vaguely suggests some notion of a delay, John (2005) fails to teach or suggest the specific limitations quoted above from amended claim 33. Even in combination with John (2005) and in combination with each other, the remaining references fail to make up for this deficiency of John (2005). Applicant therefore submits that the combined art of record fails to teach or suggest all of the limitations of amended claim 33 in accordance with MPEP 2143.03. Accordingly, Applicant respectfully submits that the combined art of record fails to render present claim 33 obvious in accordance with MPEP 2143, and respectfully requests that the rejection be withdrawn.

Applicant further notes that the dependent claims include additional limitations not taught or suggested in the art of record, thus forming independent basis for non-obviousness.

### Conclusion

While several distinctions have been noted over the art of record, Applicant notes that there are several other limitations recited in the present claims which are neither taught nor suggested by the art of record. Applicant expressly reserves all rights and arguments with respect to distinctions not explicitly noted herein. In addition, to the extent that the amendments constitute a narrowing of the claims, such narrowing of the claims should not be construed as an admission as to the merits of the prior rejections. Indeed, Applicant traverses the rejections and preserves all rights and arguments. To the extent that any particular statement or argument by the Office in the pending Office Action has not been explicitly addressed herein, the same should not be construed as an acquiescence or admission by the Applicant that such statements or arguments by the Office are accurate or proper.

Based on the foregoing, all pending claims are in a condition for allowance. Accordingly, Applicant respectfully requests reconsideration and an early notice of allowance. Should the Examiner wish to discuss the amendments or arguments made herein, Applicant invites the Examiner to contact the undersigned at (513) 369-4811 or via e-mail at [aulmer@fbtlaw.com](mailto:aulmer@fbtlaw.com).

The Commissioner for Patents is hereby authorized to charge any deficiency, including any fees required for an extension of time not already paid for or any other required fees not already paid for, or to credit any overpayment of fees, to Frost Brown Todd LLC Deposit Account No. 06-2226.

Respectfully Submitted,



Andrew B. Ulmer (Reg. No. 57,003)

FROST BROWN TODD LLC

2200 PNC Center

201 East Fifth Street

Cincinnati, Ohio 45202

(513) 369-4811

[aulmer@fbtlaw.com](mailto:aulmer@fbtlaw.com)